



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,903	10/28/2003	Koji Muranishi	031948-3	3959
22204	7590	04/05/2006	EXAMINER	
NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128			JAGER, RYAN C	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/693,903	Applicant(s) MURANISHI, KOJI	
	Examiner Ryan C. Jager	Art Unit 2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeshi et al. (JP5026923).

With respect to claim 1, figure 1 of Takeshi discloses a phase adjustment circuit for receiving a first pair of clock signals (1 and 2) and outputting a second pair of clock signals (1 and 6) with phases satisfying a predetermined condition, comprising: a clock proliferator (delay elements 4) for receiving a first clock signal (2) and generating a plurality of clock signals therefrom (signals output from delay elements 4); a clock selector (5) for receiving said plurality of clock signals from the clock proliferator, selecting one of the received plurality of clock signals in accordance with a selection signal (10), and outputting the selected clock signal (6); and a phase difference detector (7) for receiving the selected clock signal (6) and a second clock signal (1), determining whether the phase of the second clock signal and the phase of the selected clock signal satisfy the predetermined condition, and outputting a detection signal (8) indicating whether the predetermined condition is satisfied; the first clock signal (2) and the second clock signal (1) constituting the first pair of clock signals; the second clock signal (1) and the selected clock signal (6) constituting the second pair of clock signals.

With respect to claim 2, figure 1 of Takeshi discloses the phase adjustment circuit of claim 1, wherein the clock proliferators (delay elements 4) generates the plurality of clock signals by delaying the first clock signal (2) by different amounts.

With respect to claim 3, figure 1 of Takeshi discloses the phase adjustment circuit of claim 2, wherein the clock proliferator (delay elements 4) comprises a cascaded plurality of delay elements (cascaded delay elements 4).

With respect to claim 4, figure 1 of Takeshi discloses the phase adjustment circuit of claim further comprising: an external input terminal for input of the selection signal; and an external output terminal for output of the detection signal (circuit 9 is external to the clock proliferators and phase detector and therefore the input for the selection signal 10 and the output for the detection signal 8 are external).

With respect to claim 10, figure 1 of Takeshi discloses the phase adjustment circuit of claim 1, further comprising a selection signal generator (9) for receiving the detection signal (8) and generating the selection signal (10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. in view of Cao et al. (USPA Pub. No 2003/0001634).

With respect to claim 5, figures 52 and 55 of Tamura et al. disclose all the limitations of this claim with 3001 of figure 52 replacing 3001 of figure 55, except for the use of an externally writable register for storing the selection signal and supplying the selection signal to the clock selector. However, figures 2 and 3 of Cao et al. disclose using an externally writable register (30, figure 3) for storing the selection signal (CNT) and supplying the selection signal (CNT) to the clock selector (MUX A, figure 2 which is part of 10, figure 3). Therefore it would have been obvious to one skilled in the art at the time the invention was made to modify the combination of figures 52 and 55 by using the register array (30) of figure 3, for the purpose of storing the selection signal, as in an automated system, so that it may be supplied at anytime not just the second it is produced (paragraph 0012, Cao et al.).

3. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi in view of Kuwata (USP 6959061).

With respect to claims 6 and 8, figure 1 of Takeshi discloses all the limitations of this claim, except for a phase adjustment circuit comprising: a first flip-flop for latching and outputting the state of the second clock signal at rising edges of the selected clock signal; a second flip-flop for latching and outputting the state of the second clock signal at falling edges of the selected clock signal; and a logic circuit for performing a logic operation on outputs of the first flip-flop and the second flip-flop, thereby generating the detection signal. However, figure 5 of Kuwata discloses a phase detection circuit comprising a first flip-flop (13a) for latching and outputting the state of the second clock signal (data) at rising edges of the selected clock signal (clk); a second flip-flop (13b) for

latching and outputting the state of the second clock signal (data) at falling edges of the selected clock signal (clk); and a logic circuit (inverter 13d' and NAND 13e) for performing a logic operation on outputs of the first flip-flop (13a) and the second flip-flop (13b), thereby generating the detection signal (ESPD) that is held at a fixed value to prevent erroneous synchronization. Therefore it would have been obvious to one skilled in the art at the time the invention was made to modify the circuit of in figure 1 of Takeshi by replacing the phase detector (7, figure 1) with the phase detector (13, figure 5) of Kuwata for the purpose of eliminating the possibility of erroneous synchronization (col9, lines 39-51).

4. Claims 6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pan (USP 6348823) in view of Kuwata (USP 6959061).

With respect to claims 6 and 8, figure 7A of Pan discloses a phase adjustment circuit for receiving a first pair of clock signals (704 and 708) and outputting a second pair of clock signals (708 and S0) with phases satisfying a predetermined condition, comprising: a clock proliferator (734) for receiving a first clock signal (704) and generating a plurality of clock signals therefrom; a clock selector (732) for receiving said plurality of clock signals from the clock proliferator, selecting one of the received plurality of clock signals in accordance with a selection signal (726), and outputting the selected clock signal (S0); and a phase difference detector (612) for receiving the selected clock signal (S0) and a second clock signal (708), determining whether the phase of the second clock signal and the phase of the selected clock signal satisfy the predetermined condition, and outputting a detection signal (714) indicating whether the

Art Unit: 2816

predetermined condition is satisfied; the first clock signal (704) and the second clock signal (708) constituting the first pair of clock signals; the second clock signal (708) and the selected clock signal (S0) constituting the second pair of clock signals. Figure 7A of Pan does not disclose a phase adjustment circuit comprising: a first flip-flop for latching and outputting the state of the second clock signal at rising edges of the selected clock signal; a second flip-flop for latching and outputting the state of the second clock signal at falling edges of the selected clock signal; and a logic circuit for performing a logic operation on outputs of the first flip-flop and the second flip-flop, thereby generating the detection signal. However, figure 5 of Kuwata discloses a phase detection circuit comprising a first flip-flop (13a) for latching and outputting the state of the second clock signal (data) at rising edges of the selected clock signal (clk); a second flip-flop (13b) for latching and outputting the state of the second clock signal (data) at falling edges of the selected clock signal (clk); and a logic circuit (inverter 13d' and NAND 13e) for performing a logic operation on outputs of the first flip-flop (13a) and the second flip-flop (13b), thereby generating the detection signal (ESPD) that is held at a fixed value to prevent erroneous synchronization. Therefore it would have been obvious to one skilled in the art at the time the invention was made to modify the circuit of in figure 1 of Takeshi by replacing the phase detector (7, figure 1) with the phase detector (13, figure 5) of Kuwata for the purpose of eliminating the possibility of erroneous synchronization (col9, lines 39-51).

Art Unit: 2816

With respect to claim 9, the above modification discloses the phase adjustment circuit of claim 8, wherein the first clock signal (704) has a higher frequency than the second clock signal (708).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pan (USP 6348823) in view of Kuwata (USP 6959061).

With respect to claim 7, the modification in the rejection of claims 6, 8 and 9 discloses all the limitations of this claim except that the frequency of the second clock is higher than the frequency of the first clock. However, it would have been obvious to one skilled in the art at the time the invention was made to modify the above modification by programming the programmable divider (738) of Pan to produce a frequency that is higher than the first clock (704) signals frequency for the second clock (708) for the purpose of producing a desired higher frequency in the selected output clock signal.

Allowable Subject Matter

6. Claims 11, 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

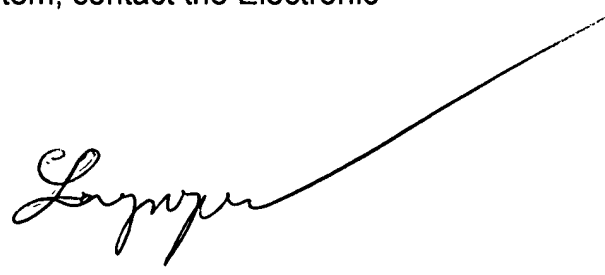
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan C. Jager whose telephone number is (571) 272-7016. The examiner can normally be reached on M-F 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan C. Jager
3/30/2006



LONG NGUYEN
PRIMARY EXAMINER